



# UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,116	06/23/2003	Hanno Ulrich	DE920010077US1	9096

7590 08/07/2006  
Floyd A. Gonzalez  
IBM Corporation  
2455 South Road, P386  
Poughkeepsie, NY 12601

EXAMINER

SHARON, AYAL I

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/602,116

Applicant(s)

ULRICH, HANNO

Examiner

Ayal I. Sharon

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1,2,4 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Introduction***

1. Claims 1-6 of U.S. Application 10/602,116 are currently pending.
2. The application claims priority to EPO application 02014506.6, filed on 06/29/2002.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities: The terms "6a" and "6b" next to the claimed formulas do not limit the claims, and therefore are not appropriate. Appropriate correction is required.
4. Claims 2, 4, and 6 are objected to because of the following informalities: The terms "CP" has no definition in the claims, and should be replaced with "central processor" (as defined in paragraph [0004] of the specification). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1-6 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap

between the elements. See MPEP § 2172.01. The omitted elements are: definitions of the variables used in the claimed equations, such as " $v_n$ " and " $u_n$ ", and  $p_n$ , which is merely defined as "a suitable parameter".

7. Claims 1, 3, and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, 3, and 5 cite the use of "entry and target control quantities  $\chi$  and  $\mu$  of a system model", but does not define, in the claims, what these quantities represent.
8. Claims 2, 4, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, 3, and 5 define the "control quantities  $\chi$  and  $\mu$  of a system model" as "CP utilizations in a computer system model." It is not clear if these "utilizations" correspond to "utilization percentages" or some other form of "utilization".

### ***Claim Rejections - 35 USC § 101***

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. **Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

11. The fundamental test for patent eligibility is to determine whether the claimed invention produces a **"useful, concrete and tangible result."**

12. See State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). In these decisions, the court found that the claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.”
13. See State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. (“[T]he transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades”).
14. See also AT&T, 172 F.3d at 1358, 50 USPQ2d at 1452 (Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held patentable subject matter because the process used the algorithm to produce a useful, concrete, tangible result - a primary inter-exchange carrier (“PIC”) indicator - without preempting other uses of the mathematical principle).
15. The Examiner respectfully submits that under current PTO practice, the claimed invention does not recite a concrete, useful, tangible result.
16. **Claims 1-2 and 4-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

17. As currently written, the claimed "computer-program-based method" and "computer system" appear to consist of non-functional descriptive material; see MPEP Section 2106, subsection IV.B.1(a).
18. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

### ***Conclusion***

19. Examiner was not able to locate prior art that expressly taught the equations claimed in the independent claims.
20. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.
21. Menascé, D.A. et al. Capacity Planning and Performance Modeling. © 1994. pp.iii-ix, 113-129, 153-159, and 263-266. (See especially "Section 4.3.3 Model Predictions" on p.125, which teaches the utilization formula is as follows: "server utilization = throughput x mean service time", so therefore "utilization =  $(\lambda / \mu)$ ". See also formula 5.1 on p.154 for "actual utilization" of a device. See also the discussion of "tightly" and "loosly" coupled multiprocessors on pp.262-266.)
22. Färber, G. et al. "Improving Processor Utilization with a Task Classification Model Based Application Specific Hard Real-Time Architecture." Proc. 4<sup>th</sup> Int'l Workshop

Art Unit: 2123

on Real-Time Computing Systems and Applications. Oct. 27-29, 1997. pp.276-283. (See section 3.2, on p.279, and also Fig.2, for an analysis of the performance of a "processor subsystem" under certain conditions.)

23. Lauzac, S. et al. "An Efficient RMS Admission Control and its Application to Multiprocessor Scheduling." Proc. of the 1<sup>st</sup> Merged Int'l ... and Symposium on Parallel and Distributed Processing. Mar.30-Apr.3, 1998. pp.511-518. (See Section 4.2.2, "Average Processor Utilization", and Fig.4, which teach the average processor utilization for different multiprocessor admission control algorithms.)

### ***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272 -3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi -week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272 -3753.

Any response to this office action should be faxed to (571) 273 -8300, or mailed to:

USPTO  
P.O. Box 1450  
Alexandria, VA 22313 -1450

or hand carried to:

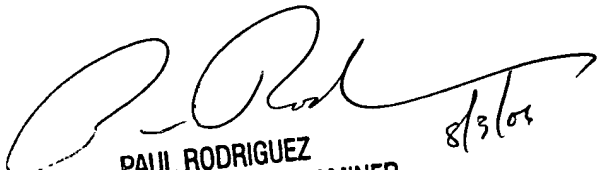
Application/Control Number: 10/602,116  
Art Unit: 2123

Page 7

USPTO  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to the Tech Center 2100 Receptionist, whose  
telephone number is (571) 272 -2100.

Ayal I. Sharon  
Art Unit 2123  
August 2, 2006

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
8/3/06